Estimate for the Work of Providing and laying of 600 mm dia RCC NP3 Class Sewerage pipeline from Thanisandra BBMP Office to Elements Mall along Thanisandra Main Road Coming under Ward no.6- Thanisandra of Byatarayanapura Constituency

Sl No	Description of Work	MH From	MH To	Unit	No	Length	Width	Depth	Quantity	Rate	Amount
1	Cutting road surfaces for pipeline trenches and disposing of the excavated stuff as directed including barricading, danger lighting etc. in the classifications for:**Asphalt Road** **(BWSSB SR 17-18 No. 16.2 Code:A105B) Page 56**										
		MH01	MH02	Cum	1	30	1.2	0.25	9		
		MH02	MH03	Cum	1	30	1.2	0.25	9		
		MH03	MH04	Cum	1	29	1.2	0.25	8.7		
		MH04	MH05	Cum	1	30	1.2	0.25	9		
		MH05	MH06	Cum	1	30	1.2	0.25	9		
		MH06	MH07	Cum	1	30	1.2	0.25	9		
		MH07	MH08	Cum	1	35	1.2	0.25	10.5		
		MH08	MH09	Cum	1	36	1.2	0.25	10.8		
		MH09	MH10	Cum	1	30	1.2	0.25	9		
		MH10	MH11	Cum	1	31	1.2	0.25	9.3		
		MH11	MH12	Cum	1	30	1.2	0.25	9		
		MH12	MH13	Cum	1	30	1.2	0.25	9		
		MH13	MH14	Cum	1	30	1.2	0.25	9		
		MH14	MH15	Cum	1	30	1.2	0.25	9		
		MH15	MH16	Cum	1	41	1.2	0.25	12.3		
		MH16	MH17	Cum	1	31	1.2	0.25	9.3		
		MH17	MH18	Cum	1	28	1.2	0.25	8.4		
		MH18	MH19	Cum	1	28	1.2	0.25	8.4		
		MH19	MH20	Cum	1	35	1.2	0.25	10.5		
		MH20	MH21	Cum	1	35	1.2	0.25	10.5		
		MH21	MH22	Cum	1	30	1.2	0.25	9		
		MH22	MH23	Cum	1	30	1.2	0.25	9		
		MH23	MH24	Cum	1	40	1.2	0.25	12		
		MH24	MH25	Cum	1	40	1.2	0.25	12		
		MH25	MH26	Cum	1	40	1.2	0.25	12		
		MH26	MH27	Cum	1	40	1.2	0.25	12		
		MH27	MH28	Cum	1	30	1.2	0.25	9		
		MH28	MH29	Cum	1	30	1.2	0.25	9		
		MH29	MH30	Cum	1	34	1.2	0.25	10.2		
		MH30	MH31	Cum	1	30	1.2	0.25	9		
		MH31	MH32	Cum	1	30	1.2	0.25	9		
		MH32	MH33	Cum	1	30	1.2	0.25	9		
		MH33	MH34	Cum	1	31	1.2	0.25	9.3		
		MH34	MH35	Cum	1	35	1.2	0.25	10.5		
		MH35	MH36	Cum	1	33	1.2	0.25	9.9		
		MH36	MH37	Cum	1	35	1.2	0.25	10.5		
		MH37	MH38	Cum	1	35	1.2	0.25	10.5		
		MH38	MH39	Cum	1	35	1.2	0.25	10.5		
		MH39	MH40	Cum	1	35	1.2	0.25	10.5		
	Total				39	1,272.00			381.6	894	341150.4
2	EXCAVATING FOR PIPE LINE TRENCHES OF REQUIRED WIDTH by mechanical / & manual means including dressing sides. ramming of bottoms. BOULDERS of 30 cms size, etc. for: Pipes of all dia. for depth upto 2.0 M in all types of soils Note : If any shoring and strutting, will be paid separately **(BWSSB SR 17-18 No: 1.1 Code:A050A) Page 51**										
		MH01	MH02	Cum	1	30	1.2	2	72		
		MH02	MH03	Cum	1	30	1.2	2	72		
		MH03	MH04	Cum	1	29	1.2	2	69.6		
		MH04	MH05	Cum	1	30	1.2	2	72		
		MH05	MH06	Cum	1	30	1.2	2	72		
		MH06	MH07	Cum	1	30	1.2	2	72		
		MH07	MH08	Cum	1	35	1.2	2	84		
		MH08	MH09	Cum	1	36	1.2	2	86.4		
		MH09	MH10	Cum	1	30	1.2	2	72		
		MH10	MH11	Cum	1	31	1.2	2	74.4		
		MH11	MH12	Cum	1	30	1.2	2	72		
		MH12	MH13	Cum	1	30	1.2	2	72		
		MH13	MH14	Cum	1	30	1.2	2	72		
		MH14	MH15	Cum	1	30	1.2	2	72		
		MH15	MH16	Cum	1	41	1.2	2	98.4		
		MH16	MH17	Cum	1	31	1.2	2	74.4		
		MH17	MH18	Cum	1	28	1.2	2	67.2		
		MH18	MH19	Cum	1	28	1.2	2	67.2		
		MH19	MH20	Cum	1	35	1.2	2	84		
		MH20	MH21	Cum	1	35	1.2	2	84		
		MH21	MH22	Cum	1	30	1.2	2	72		
		MH22	MH23	Cum	1	30	1.2	2	72		
		MH23	MH24	Cum	1	40	1.2	2	96		
		MH24	MH25	Cum	1	40	1.2	2	96		
		MH25	MH26	Cum	1	40	1.2	2	96		
		MH26	MH27	Cum	1	40	1.2	2	96		
		MH27	MH28	Cum	1	30	1.2	2	72		
		MH28	MH29	Cum	1	30	1.2	2	72		
		MH29	MH30	Cum	1	34	1.2	2	81.6		
		MH30	MH31	Cum	1	30	1.2	2	72		

		MH31	MH32	Cum	1	30	1.2	2	72		
		MH32	MH33	Cum	1	30	1.2	2	72		
		MH33	MH34	Cum	1	31	1.2	2	74.4		
		MH34	MH35	Cum	1	35	1.2	2	84		
		MH35	MH36	Cum	1	33	1.2	2	79.2		
		MH36	MH37	Cum	1	35	1.2	2	84		
		MH37	MH38	Cum	1	35	1.2	2	84		
		MH38	MH39	Cum	1	35	1.2	2	84		
		MH39	MH40	Cum	1	35	1.2	2	84		
					39	1,272.00			-381.6		
	Deduct Asphalt Cutting								2,671.20	167	446090.4
	Total										
3	Pipes of all dia. for depth 2.0 to 4.0 M in all types of soils **Note :** If any shoring and strutting, will be paid separately **(BWSSB SR 17-18 No.1.2 Code:A050B) Page 51**										
		MH01	MH02	Cum	1	30	1.2	1	36		
		MH02	MH03	Cum	1	29	1.2	1	34.8		
		MH03	MH04	Cum	1	30	1.2	1.35	48.6		
		MH04	MH05	Cum	1	30	1.2	1.4	50.4		
		MH05	MH06	Cum	1	30	1.2	1.4	50.4		
		MH06	MH07	Cum	1	35	1.2	1.45	60.9		
		MH07	MH08	Cum	1	36	1.2	1.45	62.64		
		MH08	MH09	Cum	1	30	1.2	1.35	48.6		
		MH09	MH10	Cum	1	31	1.2	1.15	42.78		
		MH10	MH11	Cum	1	30	1.2	0.85	30.6		
		MH11	MH12	Cum	1	30	1.2	0.6	21.6		
		MH12	MH13	Cum	1	30	1.2	0.45	16.2		
		MH13	MH14	Cum	1	30	1.2	0.35	12.6		
		MH14	MH15	Cum	1	41	1.2	0.25	12.3		
		MH15	MH16	Cum	1	31	1.2	0.3	11.16		
		MH16	MH17	Cum	1	28	1.2	0.85	28.56		
		MH17	MH18	Cum	1	28	1.2	0.85	28.56		
		MH18	MH19	Cum	1	35	1.2	0.85	35.7		
		MH19	MH20	Cum	1	35	1.2	0.85	35.7		
		MH20	MH21	Cum	1	30	1.2	0.85	30.6		
		MH21	MH22	Cum	1	30	1.2	0.85	30.6		
		MH22	MH23	Cum	1	40	1.2	0.85	40.8		
		MH23	MH24	Cum	1	40	1.2	0.85	40.8		
		MH24	MH25	Cum	1	40	1.2	0.6	28.8		
	Total								839.7	225	188932.5
4	EXCAVATING FOR PIPE LINE TRENCHES OF REQUIRED WIDTH by mechanical / & manual means including dressing sides, ramming of bottoms, providing barricading, danger lighting, shoring, strutting, dewatering, etc. IN DISINTEGRATED ROCK, SOFT ROCK, SOFT SHALE AND MEDIUM HARD ROCK COMPRISING OF LIME STONE, SAND STONE, HARD SHALE, SCHIEST, FISSURED ROCK without resorting to blast etc. for			Cum							
4.1.a	Pipes of all dia. for depth upto 2.0 M Note : If any shoring and strutting, will be paid separately **(BWSSB SR 17-18 No. 2.1 Code:A055A) Page 51** **Considering 20% of Earth work Quantity**			Cum					564.24	404	215832.96
5	EXCAVATING FOR PIPE LINE TRENCHES OF FISSURED ROCK without resorting to blast etc. for			Cum							
5.1.a	Pipes of all dia. for depth 2.0 to 4.0 M Note : If any and strutting, will be paid separately **(BWSSB SR 17-18 No.2.2 Code:A055B) Page 51** **Considering 15% of Earth work Quantity**			Cum					125.96	460	57939.3
6	EXCAVATING FOR PIPE LINE TRENCHES OF REQUIRED WIDTH by mechanical / & manual means including dressing sides, ramming of bottoms, providing barricading, LATERITE ROCK CONTAINING IRON ORE TRIMMING TO PROPER SLOPE etc. for:: Pipes of Pipes of all dia. for depth 2.0 to 4.0 mtr **(BWSSB SR 17-18 No.3.2 Code:A060B) Page 52**			Cum							
6.1.a	**Considering 5% of Earth work Quantity**			Cum					41.99	1,031.00	43286.53
	Providing and installing **sheet piling** for both sides of the trenches for following depths with mild steel sheets of not less than 6.5 mm										

7	thick, stronger knife edge, recessed spreader sockets, 3 inch single or double wall shields, to be designed by the contractor to withstand all types of soils, maximum depth as per the approved design drawings, including labour charges for installing and removing the sheet piling at various reaches of sewer line constructions, including loading, unloading, transporting to the suitable location etc. complete with all lead and lifts. (Measurement shall be taken for one side only even though it is provided for both sides).**For depth 3.0 m to 6m** **(BWSSB SR 17-18 No. 122.2 Code:T470B) Page**			SQM		250	3		750	797	597750
8	REFILLING OF EARTH around pipelines, in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering all lead and lift including cost of all labour including consolidation by mechanical means approved by the Engineer in charge, when earth is at suitable moisture content with desired field density upto 95% maximum dry density (modified heavy proctor test) for restoration of roads without settlement including HOM of machineries, complete. (The contractor shall take care while consolidating the earth, so that, pipes laid are not damaged due to mechanical compaction and shall restore the damaged pipes at his own cost, in case of damage) etc. with: Approved earth available nearby, lead upto 100 M and lift upto 1.5 M. Note: In exceptional cases, earth may be obtained from borrow pit with extra lead, duly obtaining approval from the Chief Engineer **(BWSSB SR 17-18 No. 14.1 Code:A095A) Page 56**			Cum							
	Total E.W.E 0-2 mtr depth								2,671.20		
	Total E.W.E 2-4 mtr depth								839.7		
	Total E.W.E [A]								**3,510.90**		
	Deductions						Area				
	Pipe Volume	0.785	0.8	0.8	1	1,225.20	0.5		615.05		
	Manhole Volume, PCC	0.785	2.49	2.49	44		4.87	0.25	53.54		
	Manhole Volume = 3.142 x 1.5 x 1.5 x .25 x 3.2 x 3	0.785	2.2	1.2	1.7	45	2.27	2.22	226.3		
	Bedding using Approved stone dust								305.28		
	Providing Wet Mix Macadam								305.28		
	Total Deductions [B]								**1,505.45**		
	Refilling qty [C] = [A]- [B]			Cum					**2,005.45**	**103**	206561.84
9	Disposal off the excess excavated earth of all types by vehicle including loading, unloading with all lead and lifts, labour, machineries etc. for: **Distance of 10 KM** **(BWSSB SR 17-18 No: 20.5. Code:A115E & F) Page 57**			Cum							
	Pipe Volume	0.785	0.8	0.8	1	1,225.20	0.5		615.05		
	Manhole Volume, PCC	0.785	2.49	2.49	39		4.87	0.25	47.45		
	Manhole Volume =		2.2	1.24					226.3		
	PCC for Bedding								305.28		
	Providing Wet Mix Macadam								305.28		
	Total								1,499.36	**243**	364344.84
10	Supplying S&S RCC SPUN / VIBRATED CAST PIPES (REINFORCED) pipes NP-3 Class conforming to IS :458- **RCC NP3 Class pipe of 600 mm dia.** **(BWSSB SR 17-18 No: 5.7 Code:T050G) Page 159**					C/C length	Deduct MH Dia		**Qty = C/C Length - MH Dia**		
		MH01	MH02	m	1	30	1.2		28.8		
		MH02	MH03	m	1	30	1.2		28.8		
		MH03	MH04	m	1	29	1.2		27.8		
		MH04	MH05	m	1	30	1.2		28.8		
		MH05	MH06	m	1	30	1.2		28.8		
		MH06	MH07	m	1	30	1.2		28.8		
		MH07	MH08	m	1	35	1.2		33.8		
		MH08	MH09	m	1	36	1.2		34.8		
		MH09	MH10	m	1	30	1.2		28.8		
		MH10	MH11	m	1	31	1.2		29.8		
		MH11	MH12	m	1	30	1.2		28.8		
		MH12	MH13	m	1	30	1.2		28.8		
		MH13	MH14	m	1	30	1.2		28.8		
		MH14	MH15	m	1	30	1.2		28.8		
		MH15	MH16	m	1	41	1.2		39.8		
		MH16	MH17	m	1	31	1.2		29.8		
		MH17	MH18	m	1	28	1.2		26.8		
		MH18	MH19	m	1	28	1.2		26.8		
		MH19	MH20	m	1	35	1.2		33.8		
		MH20	MH21	m	1	35	1.2		33.8		
		MH21	MH22	m	1	30	1.2		28.8		
		MH22	MH23	m	1	30	1.2		28.8		
		MH23	MH24	m	1	40	1.2		38.8		
		MH24	MH25	m	1	40	1.2		38.8		
		MH25	MH26	m	1	40	1.2		38.8		
		MH26	MH27	m	1	40	1.2		38.8		
		MH27	MH28	m	1	30	1.2		28.8		
		MH28	MH29	m	1	30	1.2		28.8		
		MH29	MH30	m	1	34	1.2		32.8		

		MH30	MH31	m	1	30	1.2		28.8		
		MH31	MH32	m	1	30	1.2		28.8		
		MH32	MH33	m	1	30	1.2		28.8		
		MH33	MH34	m	1	31	1.2		29.8		
		MH34	MH35	m	1	35	1.2		33.8		
		MH35	MH36	m	1	33	1.2		31.8		
		MH36	MH37	m	1	35	1.2		33.8		
		MH37	MH38	m	1	35	1.2		33.8		
		MH38	MH39	m	1	35	1.2		33.8		
		MH39	MH40	m	1	35	1.2		33.8		
	Total				39	**1,272.00**			**1,225.20**	**3,110.00**	**3810372**
11	Providing and constructing "WIRE CUT BRICK MANHOLE CHAMBERS" using suplhate resistant cement, coNickel in shape attop, with CC 1:3:6 foundation using 40 mm and down size graded metal of approved quality and with an offset of 0.15M alround the chamber. Construct Brick masonry in CM 1:4, 340 mm thick, with wirecut bricks of approved quality, plaster inside and out side with CM 1:3 , 12 mm thick, except for the coNickel surface outside wherethe plaster thickness shall be 20 mm. Slope inside to be 1:6 in theconcrete towards central drain and finished smooth. Fixing of pipes in CC 1:2:4 with graded metal of 20 mm and down size. Supplying and fixing SFRC manhole frame and cover conforming to IS:12592 with latest amendment, in CC 1:2:4. Supplying and fixing footsteps made of 12 mm dia. steel bars (Fe-415) with 3 mm thick plastic encapsulation (IS-10910). The footsteps shall be fixed 30cms apart and on CC block embedded to masonry wall. The whole works include excavation in all types of soils, watering, curing, barricading, danger lighting, pouring tar over MH frame and cover, cost of tar, shoring, strutting										
	Constructing Brick Masonry Circular Manholes 1.5 internal dia. & 1.0 M depth include SFRC F&C (**BWSSB SR 17-18 No. 104.1 Code:T310A) Page 169**			m No	24				**24**	**22,266.00**	**534384**
12	**Depth above 1m and below 2 m (36,923-22,266) = 14,657/-**			m	20.4				**20.4**	**14,657.00**	**299002.8**
13	**Constructing Brick Masonry Circular Manholes 1.5 internal dia. & 2.0 M depth include SFRC F&C (BWSSB SR 17-18 No. 104.2 Code:T310B)**			m No	9				**9**	**36,923.00**	**332307**
14	**Depth above 2m and below 3 m (53135.0-36923) = 16212/-**			m	5.85				**5.85**	**16,212.00**	**94840.2**
15	**Constructing Brick Masonry Circular Manholes 1.5 internal dia. & 3.0 M depth include SFRC F&C (BWSSB SR 17-18 No. 104.3 Code:T310C)**			m Nos	6				**6**	**53,135.00**	**318810**
16	**Depth above 3m and below 4 m (69,726-53,135) =**			Nos	2.7				**2.7**	**16,591.00**	**44795.7**
17	Conducting the level and strip of SURVEY of alignment of Main sewers of required diameter including all data required for generating GIS map of sewer network, preparation and submission of plan and LS with ground level at 30 M intervals and junction points along the centre line of the alignment etc. showing the right of way, any permanent features, culverts, branch sewer pipe etc. complete as per specifications and as directed by the Engineer in charge with all leadand lifts etc. complete for:: **Sewer pipes above 300 mm dia. (BWSSB SR 17-18 No. 123.20 Code:T475B) Page 182**			RMT							
		MH01	MH02	m	1	30			30		
		MH02	MH03	m	1	30			30		
		MH03	MH04	m	1	29			29		
		MH04	MH05	m	1	30			30		
		MH05	MH06	m	1	30			30		
		MH06	MH07	m	1	30			30		
		MH07	MH08	m	1	35			35		
		MH08	MH09	m	1	36			36		
		MH09	MH10	m	1	30			30		
		MH10	MH11	m	1	31			31		
		MH11	MH12	m	1	30			30		
		MH12	MH13	m	1	30			30		
		MH13	MH14	m	1	30			30		
		MH14	MH15	m	1	30			30		
		MH15	MH16	m	1	41			41		
		MH16	MH17	m	1	31			31		
		MH17	MH18	m	1	28			28		
		MH18	MH19	m	1	28			28		
		MH19	MH20	m	1	35			35		
		MH20	MH21	m	1	35			35		
		MH21	MH22	m	1	30			30		
		MH22	MH23	m	1	30			30		

		MH23	MH24	m	1	40			40			
		MH24	MH25	m	1	40			40			
		MH25	MH26	m	1	40			40			
		MH26	MH27	m	1	40			40			
		MH27	MH28	m	1	30			30			
		MH28	MH29	m	1	30			30			
		MH29	MH30	m	1	34			34			
		MH30	MH31	m	1	30			30			
		MH31	MH32	m	1	30			30			
		MH32	MH33	m	1	30			30			
		MH33	MH34	m	1	31			31			
		MH34	MH35	m	1	35			35			
		MH35	MH36	m	1	33			33			
		MH36	MH37	m	1	35			35			
		MH37	MH38	m	1	35			35			
		MH38	MH39	m	1	35			35			
		MH39	MH40	m	1	35			35			
	Total				39				**1,272.00**	**28**	**35616**
18	Providing, erecting and removing casurina pole three tier BARRICADING using poles of 7.5 to 10 cms dia. and 1.5 M height above ground fixed vertically at intervals of 2.0 to 2.5 M centre to centre and horizontally at 0.5M above ground **(BWSSB SR 17-18 No. 128 Code:T500A) Page 183**			RMT								
		MH01	MH02	m	1	30			30			
		MH02	MH03	m	1	30			30			
		MH03	MH04	m	1	29			29			
		MH04	MH05	m	1	30			30			
		MH05	MH06	m	1	30			30			
		MH06	MH07	m	1	30			30			
		MH07	MH08	m	1	35			35			
		MH08	MH09	m	1	36			36			
		MH09	MH10	m	1	30			30			
		MH10	MH11	m	1	31			31			
		MH11	MH12	m	1	30			30			
		MH12	MH13	m	1	30			30			
		MH13	MH14	m	1	30			30			
		MH14	MH15	m	1	30			30			
		MH15	MH16	m	1	41			41			
		MH16	MH17	m	1	31			31			
		MH17	MH18	m	1	28			28			
		MH18	MH19	m	1	28			28			
		MH19	MH20	m	1	35			35			
		MH20	MH21	m	1	35			35			
		MH21	MH22	m	1	30			30			
		MH22	MH23	m	1	30			30			
		MH23	MH24	m	1	40			40			
		MH24	MH25	m	1	40			40			
		MH25	MH26	m	1	40			40			
		MH26	MH27	m	1	40			40			
		MH27	MH28	m	1	30			30			
		MH28	MH29	m	1	30			30			
		MH29	MH30	m	1	34			34			
		MH30	MH31	m	1	30			30			
		MH31	MH32	m	1	30			30			
		MH32	MH33	m	1	30			30			
		MH33	MH34	m	1	31			31			
		MH34	MH35	m	1	35			35			
		MH35	MH36	m	1	33			33			
		MH36	MH37	m	1	35			35			
		MH37	MH38	m	1	35			35			
		MH38	MH39	m	1	35			35			
		MH39	MH40	m	1	35			35			
	Total				39				**1,272.00**	**52**	**66144**
19	HC Water pumpset (3500 Ltr / Hr) **(BWSSB SR 17-18 Page No.6 EQP Code :2270)**			Day	2	30			**60**	**775**	**46500**
20	KSRB 2.8 : Providing and filling in foundation with granite / trap broken metal 100 mm. and down size, with approved sand including hand packing, ramming, watering, including cost of all materials and labour with all lead and lift. complete as per specifications. specification No. KBS. KPWD SR 18-19 Sl No:2.15 Page 7			Cum								
		MH01	MH02	Cum	1	30	1.2	0.2	7.2			
		MH02	MH03	Cum	1	30	1.2	0.2	7.2			
		MH03	MH04	Cum	1	29	1.2	0.2	6.96			
		MH04	MH05	Cum	1	30	1.2	0.2	7.2			
		MH05	MH06	Cum	1	30	1.2	0.2	7.2			
		MH06	MH07	Cum	1	30	1.2	0.2	7.2			
		MH07	MH08	Cum	1	35	1.2	0.2	8.4			
		MH08	MH09	Cum	1	36	1.2	0.2	8.64			
		MH09	MH10	Cum	1	30	1.2	0.2	7.2			
		MH10	MH11	Cum	1	31	1.2	0.2	7.44			
		MH11	MH12	Cum	1	30	1.2	0.2	7.2			
		MH12	MH13	Cum	1	30	1.2	0.2	7.2			
		MH13	MH14	Cum	1	30	1.2	0.2	7.2			
		MH14	MH15	Cum	1	30	1.2	0.2	7.2			
		MH15	MH16	Cum	1	41	1.2	0.2	9.84			
		MH16	MH17	Cum	1	31	1.2	0.2	7.44			
		MH17	MH18	Cum	1	28	1.2	0.2	6.72			
		MH18	MH19	Cum	1	28	1.2	0.2	6.72			
		MH19	MH20	Cum	1	35	1.2	0.2	8.4			
		MH20	MH21	Cum	1	35	1.2	0.2	8.4			
		MH21	MH22	Cum	1	30	1.2	0.2	7.2			
		MH22	MH23	Cum	1	30	1.2	0.2	7.2			

		MH23	MH24	Cum	1	40	1.2	0.2	9.6			
		MH24	MH25	Cum	1	40	1.2	0.2	9.6			
		MH25	MH26	Cum	1	40	1.2	0.2	9.6			
		MH26	MH27	Cum	1	40	1.2	0.2	9.6			
		MH27	MH28	Cum	1	30	1.2	0.2	7.2			
		MH28	MH29	Cum	1	30	1.2	0.2	7.2			
		MH29	MH30	Cum	1	34	1.2	0.2	8.16			
		MH30	MH31	Cum	1	30	1.2	0.2	7.2			
		MH31	MH32	Cum	1	30	1.2	0.2	7.2			
		MH32	MH33	Cum	1	30	1.2	0.2	7.2			
		MH33	MH34	Cum	1	31	1.2	0.2	7.44			
		MH34	MH35	Cum	1	35	1.2	0.2	8.4			
		MH35	MH36	Cum	1	33	1.2	0.2	7.92			
		MH36	MH37	Cum	1	35	1.2	0.2	8.4			
		MH37	MH38	Cum	1	35	1.2	0.2	8.4			
		MH38	MH39	Cum	1	35	1.2	0.2	8.4			
		MH39	MH40	Cum	1	35	1.2	0.2	8.4			
					39				**305.28**	**2,574.74**	**786016.62**
	Basic rate	**2429**									
	Area Weightage 6%	**145.74**									
	Total	**2574.74**									
21	Diversion of water course by providing Coffer dams or bunds or island as may be necessary for piers and abutments foundations, bailing out or pumping water during excavation and until completion etc., complete. (KPWD SR 2018-19, P-269 I-37.41.2)										
	37.41.2 -do- beyond 1.50 mts depth upto & including 3m depth.			Cum	1	75	2	3	450		
									450	**417.64**	**187,938.00**
	Basic rate	**394**									
	Area Weightage 6%	**23.64**									
	Total	**417.64**									
22	Dismantling size stone masonry in lime mortar/cement mortar and stacking the size stone and removing and disposing the debris with all lead & lifts etc complete including cost of all equipments and labour etc., complete as per specifications and as directed by the Engineer in charge **(KPWD SR 2016-17, P-265 I-37.48)**										
	For Culver / Drains Crossings			Cum	6	5	1.5	2	90		
									90	**182.32**	**16,408.80**
	Basic rate	**172**									
	Area Weightage 6%	**10.32**									
	Total	**182.32**									
23	Providing and constructing granite / trap / basalt size stone masonry in foundation with cement mortar 1:6 stone hammer dressed in courses not less than 20 cms high, bond stones at two meters apart in each course including cost of materials, labour, curing with all lead and lifts, etc., complete as per specification and as directed by the Engineer in charge. -For Drain walls. Specification No. KBS 5.1.13 with using available stones **(KPWD SR 2018-19, P-25 I-5.5)**										
	For Culver / Drains Crossings			Cum	6	5	1.5	2	90		
									90	**3287.74**	**295,896.45**
	A.Basic Rate	**4596**									
	B.Deduct SSM Rate (105*11.86)	**1245.3**									
	deduct contractor profit	**-124.53**									
	deduct overhead charges	**-124.53**									
	C.Arrived Rate	**3101.64**									
	D.Area Weightage 6%	**186.1**									
	Total	**3287.74**									
24	**KSRRB M400-6.1 :** Construction of granular sub-base by providing close graded cushed stone aggregates of granite / trap / basalt material, mixing in a mechanical mix plant at OMC, carriage of mixed material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per specifications. **A. Plant Mix Method** For Grading-II Material **(KPWD SR 2018-19, P-155 I-20.4.2)**			Cum							
		MH01	MH02	Cum	1	30	1.2	0.2	7.2		
		MH02	MH03	Cum	1	30	1.2	0.2	7.2		
		MH03	MH04	Cum	1	29	1.2	0.2	6.96		
		MH04	MH05	Cum	1	30	1.2	0.2	7.2		
		MH05	MH06	Cum	1	30	1.2	0.2	7.2		
		MH06	MH07	Cum	1	30	1.2	0.2	7.2		
		MH07	MH08	Cum	1	35	1.2	0.2	8.4		
		MH08	MH09	Cum	1	36	1.2	0.2	8.64		
		MH09	MH10	Cum	1	30	1.2	0.2	7.2		
		MH10	MH11	Cum	1	31	1.2	0.2	7.44		
		MH11	MH12	Cum	1	30	1.2	0.2	7.2		
		MH12	MH13	Cum	1	30	1.2	0.2	7.2		
		MH13	MH14	Cum	1	30	1.2	0.2	7.2		

		MH14	MH15	Cum	1	30	1.2	0.2	7.2		
		MH15	MH16	Cum	1	41	1.2	0.2	9.84		
		MH16	MH17	Cum	1	31	1.2	0.2	7.44		
		MH17	MH18	Cum	1	28	1.2	0.2	6.72		
		MH18	MH19	Cum	1	28	1.2	0.2	6.72		
		MH19	MH20	Cum	1	35	1.2	0.2	8.4		
		MH20	MH21	Cum	1	35	1.2	0.2	8.4		
		MH21	MH22	Cum	1	30	1.2	0.2	7.2		
		MH22	MH23	Cum	1	30	1.2	0.2	7.2		
		MH23	MH24	Cum	1	40	1.2	0.2	9.6		
		MH24	MH25	Cum	1	40	1.2	0.2	9.6		
		MH25	MH26	Cum	1	40	1.2	0.2	9.6		
		MH26	MH27	Cum	1	40	1.2	0.2	9.6		
		MH27	MH28	Cum	1	30	1.2	0.2	7.2		
		MH28	MH29	Cum	1	30	1.2	0.2	7.2		
		MH29	MH30	Cum	1	34	1.2	0.2	8.16		
		MH30	MH31	Cum	1	30	1.2	0.2	7.2		
		MH31	MH32	Cum	1	30	1.2	0.2	7.2		
		MH32	MH33	Cum	1	30	1.2	0.2	7.2		
		MH33	MH34	Cum	1	31	1.2	0.2	7.44		
		MH34	MH35	Cum	1	35	1.2	0.2	8.4		
		MH35	MH36	Cum	1	33	1.2	0.2	7.92		
		MH36	MH37	Cum	1	35	1.2	0.2	8.4		
		MH37	MH38	Cum	1	35	1.2	0.2	8.4		
		MH38	MH39	Cum	1	35	1.2	0.2	8.4		
		MH39	MH40	Cum	1	35	1.2	0.2	8.4		
					39	1,272.00			305.28	2171.94	663049.84
	Basic rate	2049									
	Area Weightage 6%	122.94									
	Total	2171.94									
25	**KSRRB M400-17 :**Providing, laying, spreading and compacting 150mm graded stone aggregate to **wet mix macadam (WMM)** specification including premixing the material with water at OMC in mechanical mix plant carriage of mixed material by tipper to site, laying in uniform layers with pavers in sub base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density Grading of material clause: 406 of MORTH specifications. **KPWD SR of 2016-17 Page No.283 Item No.20.18**			Cum							
		MH01	MH02	Cum	1	30	1.2	0.2	7.2		
		MH02	MH03	Cum	1	30	1.2	0.2	7.2		
		MH03	MH04	Cum	1	29	1.2	0.2	6.96		
		MH04	MH05	Cum	1	30	1.2	0.2	7.2		
		MH05	MH06	Cum	1	30	1.2	0.2	7.2		
		MH06	MH07	Cum	1	30	1.2	0.2	7.2		
		MH07	MH08	Cum	1	35	1.2	0.2	8.4		
		MH08	MH09	Cum	1	36	1.2	0.2	8.64		
		MH09	MH10	Cum	1	30	1.2	0.2	7.2		
		MH10	MH11	Cum	1	31	1.2	0.2	7.44		
		MH11	MH12	Cum	1	30	1.2	0.2	7.2		
		MH12	MH13	Cum	1	30	1.2	0.2	7.2		
		MH13	MH14	Cum	1	30	1.2	0.2	7.2		
		MH14	MH15	Cum	1	30	1.2	0.2	7.2		
		MH15	MH16	Cum	1	41	1.2	0.2	9.84		
		MH16	MH17	Cum	1	31	1.2	0.2	7.44		
		MH17	MH18	Cum	1	28	1.2	0.2	6.72		
		MH18	MH19	Cum	1	28	1.2	0.2	6.72		
		MH19	MH20	Cum	1	35	1.2	0.2	8.4		
		MH20	MH21	Cum	1	35	1.2	0.2	8.4		
		MH21	MH22	Cum	1	30	1.2	0.2	7.2		
		MH22	MH23	Cum	1	30	1.2	0.2	7.2		
		MH23	MH24	Cum	1	40	1.2	0.2	9.6		
		MH24	MH25	Cum	1	40	1.2	0.2	9.6		
		MH25	MH26	Cum	1	40	1.2	0.2	9.6		
		MH26	MH27	Cum	1	40	1.2	0.2	9.6		
		MH27	MH28	Cum	1	30	1.2	0.2	7.2		
		MH28	MH29	Cum	1	30	1.2	0.2	7.2		
		MH29	MH30	Cum	1	34	1.2	0.2	8.16		
		MH30	MH31	Cum	1	30	1.2	0.2	7.2		
		MH31	MH32	Cum	1	30	1.2	0.2	7.2		
		MH32	MH33	Cum	1	30	1.2	0.2	7.2		
		MH33	MH34	Cum	1	31	1.2	0.2	7.44		
		MH34	MH35	Cum	1	35	1.2	0.2	8.4		
		MH35	MH36	Cum	1	33	1.2	0.2	7.92		
		MH36	MH37	Cum	1	35	1.2	0.2	8.4		
		MH37	MH38	Cum	1	35	1.2	0.2	8.4		
		MH38	MH39	Cum	1	35	1.2	0.2	8.4		
		MH39	MH40	Cum	1	35	1.2	0.2	8.4		
					39				305.28	2001.28	610950.75
	Basic rate	1888									
	Area Weightage 6%	113.28									
	Total	2001.28									
26	KSRRB 500-4 : Providing and applying primer coat for bitumen emulsion using bitumen taker fitted with spray set MORTH / Chapter 5 **KPWD SR of 2018-19 Page No.158 Item No.21.5**			Sqm							
		MH01	MH02	Sqm	1	30	1.2		36		
		MH02	MH03	Sqm	1	30	1.2		36		
		MH03	MH04	Sqm	1	29	1.2		34.8		
		MH04	MH05	Sqm	1	30	1.2		36		
		MH05	MH06	Sqm	1	30	1.2		36		
		MH06	MH07	Sqm	1	30	1.2		36		
		MH07	MH08	Sqm	1	35	1.2		42		
		MH08	MH09	Sqm	1	36	1.2		43.2		

		MH09	MH10	Sqm	1	30	1.2		36		
		MH10	MH11	Sqm	1	31	1.2		37.2		
		MH11	MH12	Sqm	1	30	1.2		36		
		MH12	MH13	Sqm	1	30	1.2		36		
		MH13	MH14	Sqm	1	30	1.2		36		
		MH14	MH15	Sqm	1	30	1.2		36		
		MH15	MH16	Sqm	1	41	1.2		49.2		
		MH16	MH17	Sqm	1	31	1.2		37.2		
		MH17	MH18	Sqm	1	28	1.2		33.6		
		MH18	MH19	Sqm	1	28	1.2		33.6		
		MH19	MH20	Sqm	1	35	1.2		42		
		MH20	MH21	Sqm	1	35	1.2		42		
		MH21	MH22	Sqm	1	30	1.2		36		
		MH22	MH23	Sqm	1	30	1.2		36		
		MH23	MH24	Sqm	1	40	1.2		48		
		MH24	MH25	Sqm	1	40	1.2		48		
		MH25	MH26	Sqm	1	40	1.2		48		
		MH26	MH27	Sqm	1	40	1.2		48		
		MH27	MH28	Sqm	1	30	1.2		36		
		MH28	MH29	Sqm	1	30	1.2		36		
		MH29	MH30	Sqm	1	34	1.2		40.8		
		MH30	MH31	Sqm	1	30	1.2		36		
		MH31	MH32	Sqm	1	30	1.2		36		
		MH32	MH33	Sqm	1	30	1.2		36		
		MH33	MH34	Sqm	1	31	1.2		37.2		
		MH34	MH35	Sqm	1	35	1.2		42		
		MH35	MH36	Sqm	1	33	1.2		39.6		
		MH36	MH37	Sqm	1	35	1.2		42		
		MH37	MH38	Sqm	1	35	1.2		42		
		MH38	MH39	Sqm	1	35	1.2		42		
		MH39	MH40	Sqm	1	35	1.2		42		
	Total				39				1,526.40	46.64	71191.29
	Basic rate	44									
	Area Weightage 6%	2.64									
	Total	46.64									
27	Providing and Laying Semi dense bituminous concrete using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finished to the the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem roller to achieve the desired compaction as per MORTH specification Clause No 508 complete in all respect complete as per specifications. Using 100-120 TPH capacity H.M.P with sensor paver grading-I (35-40mm) with 4.5% NRMB 70 / PMB 70 Grade **KPWDSR of 2018-19 Page No.161 Item No.21.21.7**			Cum							
		MH01	MH02	Cum	1	30	1.2	0.04	1.44		
		MH02	MH03	Cum	1	30	1.2	0.04	1.44		
		MH03	MH04	Cum	1	29	1.2	0.04	1.39		
		MH04	MH05	Cum	1	30	1.2	0.04	1.44		
		MH05	MH06	Cum	1	30	1.2	0.04	1.44		
		MH06	MH07	Cum	1	30	1.2	0.04	1.44		
		MH07	MH08	Cum	1	35	1.2	0.04	1.68		
		MH08	MH09	Cum	1	36	1.2	0.04	1.72		
		MH09	MH10	Cum	1	30	1.2	0.04	1.44		
		MH10	MH11	Cum	1	31	1.2	0.04	1.48		
		MH11	MH12	Cum	1	30	1.2	0.04	1.44		
		MH12	MH13	Cum	1	30	1.2	0.04	1.44		
		MH13	MH14	Cum	1	30	1.2	0.04	1.44		
		MH14	MH15	Cum	1	30	1.2	0.04	1.44		
		MH15	MH16	Cum	1	41	1.2	0.04	1.96		
		MH16	MH17	Cum	1	31	1.2	0.04	1.48		
		MH17	MH18	Cum	1	28	1.2	0.04	1.34		
		MH18	MH19	Cum	1	28	1.2	0.04	1.34		
		MH19	MH20	Cum	1	35	1.2	0.04	1.68		
		MH20	MH21	Cum	1	35	1.2	0.04	1.68		
		MH21	MH22	Cum	1	30	1.2	0.04	1.44		
		MH22	MH23	Cum	1	30	1.2	0.04	1.44		
		MH23	MH24	Cum	1	40	1.2	0.04	1.92		
		MH24	MH25	Cum	1	40	1.2	0.04	1.92		
		MH25	MH26	Cum	1	40	1.2	0.04	1.92		
		MH26	MH27	Cum	1	40	1.2	0.04	1.92		
		MH27	MH28	Cum	1	30	1.2	0.04	1.44		
		MH28	MH29	Cum	1	30	1.2	0.04	1.44		
		MH29	MH30	Cum	1	34	1.2	0.04	1.63		
		MH30	MH31	Cum	1	30	1.2	0.04	1.44		
		MH31	MH32	Cum	1	30	1.2	0.04	1.44		
		MH32	MH33	Cum	1	30	1.2	0.04	1.44		
		MH33	MH34	Cum	1	31	1.2	0.04	1.48		
		MH34	MH35	Cum	1	35	1.2	0.04	1.68		
		MH35	MH36	Cum	1	33	1.2	0.04	1.58		
		MH36	MH37	Cum	1	35	1.2	0.04	1.68		
		MH37	MH38	Cum	1	35	1.2	0.04	1.68		
		MH38	MH39	Cum	1	35	1.2	0.04	1.68		
		MH39	MH40	Cum	1	35	1.2	0.04	1.68		
					39	1,272.00			61	9590.88	585043.68
	Basic rate	9048									
	Area Weightage 6%	542.88									
	Total	9590.88									

28	KSRRB 500-27 : Providing and laying open graded premix carpet of 20mm thick on prepared surface in a single course as wearing course including composed of 11.2 mm and 13.2mm size stone aggregates 0.027 cum / sqm premixed with bituminous binder at 1.46kg / sqm in mini hot mix plant 6-10 tonne capacity laying manually rolling with power roller 8-10 tonne, excluding cost of tack coat, including cost of all materials, labour, HOM of machineries complete as per specificationsusing VG 10 (80/100) grade. MORTH clause No. 511/Chapter 5 **KPWD SR of 2018-19 Page No.163 Item No.21.32**			Sqm							
		MH01	MH02	Sqm	1	30	1.2		36		
		MH02	MH03	Sqm	1	30	1.2		36		
		MH03	MH04	Sqm	1	29	1.2		34.8		
		MH04	MH05	Sqm	1	30	1.2		36		
		MH05	MH06	Sqm	1	30	1.2		36		
		MH06	MH07	Sqm	1	30	1.2		36		
		MH07	MH08	Sqm	1	35	1.2		42		
		MH08	MH09	Sqm	1	36	1.2		43.2		
		MH09	MH10	Sqm	1	30	1.2		36		
		MH10	MH11	Sqm	1	31	1.2		37.2		
		MH11	MH12	Sqm	1	30	1.2		36		
		MH12	MH13	Sqm	1	30	1.2		36		
		MH13	MH14	Sqm	1	30	1.2		36		
		MH14	MH15	Sqm	1	30	1.2		36		
		MH15	MH16	Sqm	1	41	1.2		49.2		
		MH16	MH17	Sqm	1	31	1.2		37.2		

		MH17	MH18	Sqm	1	28	1.2		33.6		
		MH18	MH19	Sqm	1	28	1.2		33.6		
		MH19	MH20	Sqm	1	35	1.2		42		
		MH20	MH21	Sqm	1	35	1.2		42		
		MH21	MH22	Sqm	1	30	1.2		36		
		MH22	MH23	Sqm	1	30	1.2		36		
		MH23	MH24	Sqm	1	40	1.2		48		
		MH24	MH25	Sqm	1	40	1.2		48		
		MH25	MH26	Sqm	1	40	1.2		48		
		MH26	MH27	Sqm	1	40	1.2		48		
		MH27	MH28	Sqm	1	30	1.2		36		
		MH28	MH29	Sqm	1	30	1.2		36		
		MH29	MH30	Sqm	1	34	1.2		40.8		
		MH30	MH31	Sqm	1	30	1.2		36		
		MH31	MH32	Sqm	1	30	1.2		36		
		MH32	MH33	Sqm	1	30	1.2		36		
		MH33	MH34	Sqm	1	31	1.2		37.2		
		MH34	MH35	Sqm	1	35	1.2		42		
		MH35	MH36	Sqm	1	33	1.2		39.6		
		MH36	MH37	Sqm	1	35	1.2		42		
		MH37	MH38	Sqm	1	35	1.2		42		
		MH38	MH39	Sqm	1	35	1.2		42		
		MH39	MH40	Sqm	1	35	1.2		42		
	Total				39				1,526.40	147.34	224899.77
	Basic rate	139									
	Area Weightage 6%	8.34									
	Total	147.34									

	Total Estimated Amount	11486055.67
29	BWSSB ETP Charges at 3.5%	402,011.95
30	Cost PMC/third Party Inspection LS	60,000.00
31	Advertisement Charges	50,000.00
	Miscellaneous and rounding off	1932.38
	Total	12,000,000.00

Certificate.

1 The workspot was inspected and work is found to be necessary.
2 The area comes within the Bruhat Bangalore Mahanagara Palike limits.
3 The rates adopted based on the BWSSB SR 2017-18 and KPWD SR 2018-19.
4 The provisions made in the estimate are necessary and essential.

Assistant Engineer
ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Assistant Executive Engineer
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

Executive Engineer